



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/US99/19123

(22) International Filing Date: 24 August 1999 (24.08.1999)

(30) Priority Data:  
09/146,185 01 September 1998 (01.09.1998) US(60) Parent Application or Grant  
SENORX, INC. [/]; O. BURBANK, Fred, H. [/];  
O. LUBOCK, Paul [/]; O. JONES, Michael, L. [/]; O. QUICK,  
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Published

(54) Title: SECURING SURGICAL INSTRUMENTS AT TARGET TISSUE SITES

(54) Titre: FIXATION D'INSTRUMENTS CHIRURGICAUX A DES SITES TISSULAIRES VOULUS

## (57) Abstract

Devices and methods are provided for securely affixing a medical instrument to desired tissue in a patient's body, using a fixation agent. Such medical instruments may comprise localization wires or tissue acquisition instruments, such as biopsy instruments, for example. In the case of tissue acquisition instruments, the inventors have discovered significant advantages for securely affixing the distal end of the tissue acquisition instrument to a particular tissue target area. For example, such an approach permits the imaging environment to be uncoupled from the procedural environment so that expensive and often unavailable imaging equipment, such as stereotactic imaging equipment, need not be used. In a preferred embodiment, a bonding agent, such as adhesive, surgical glue, or a solvent, is used as the fixation agent.

## (57) Abrégé

L'invention concerne des dispositifs et procédés de fixation solide d'un instrument médical, au niveau d'un tissu voulu, dans le corps d'un patient, et ce au moyen d'un agent de fixation. Un tel instrument médical peut comporter des fils métalliques de localisation ou des appareils de prélèvement de tissus, comme par exemple des instruments de biopsie. En ce qui concerne les instruments de biopsie, les inventeurs ont découvert des avantages importants d'une fixation solide, sur une zone cible de tissus, de l'extrémité distale de l'appareil de prélèvement de tissus. Par exemple, une telle approche permet de désaccoupler l'environnement d'imagerie de l'environnement de procédure, de sorte qu'il n'est pas nécessaire d'utiliser un matériel d'imagerie cher et souvent indisponible, comme un matériel d'imagerie stéréotaxique. Dans un mode de réalisation préféré, on utilise un agent de fixation, tel qu'un adhésif, une colle chirurgicale ou un solvant, en tant qu'agent de fixation.

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(71) Applicant: SENORX, INC. [US/US]; Suite 144, 13766 Alton Parkway, Irvine, CA 92618 (US).

(72) Inventors: BURBANK, Fred, H.; 30982 Steeplechase Drive, San Juan Capistrano, CA 92675 (US). LUBOCK, Paul; 30 Bethany, Laguna Niguel, CA 92677 (US). JONES, Michael, L.; 34441 Camino el Molino, Capistrano Beach, CA 92624 (US). QUICK, Richard, L.; 32181 Fall River Road, Trabuco Canyon, CA 92679 (US).

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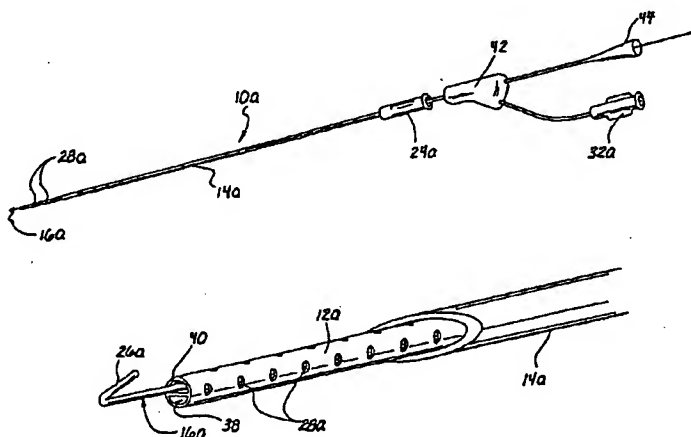
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(54) Title: SECURING SURGICAL INSTRUMENTS AT TARGET TISSUE SITES



(57) Abstract

Devices and methods are provided for securely affixing a medical instrument to desired tissue in a patient's body, using a fixation agent. Such medical instruments may comprise localization wires or tissue acquisition instruments, such as biopsy instruments, for example. In the case of tissue acquisition instruments, the inventors have discovered significant advantages for securely affixing the distal end of the tissue acquisition instrument to a particular tissue target area. For example, such an approach permits the imaging environment to be uncoupled from the procedural environment so that expensive and often unavailable imaging equipment, such as stereotactic imaging equipment, need not be used. In a preferred embodiment, a bonding agent, such as adhesive, surgical glue, or a solvent, is used as the fixation agent.

\*(Referred to in PCT Gazette No. 31/2000, Section II)

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<b>REVISED VERSION</b>	<b>INTERNATIONAL SEARCH REPORT</b>	Internat. Application No <b>PCT/US 99/19123</b>
<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7    A61B10/00.    A61B17/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7    A61B		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 95 03843 A (UNIVERSITY OF CALIFORNIA) 9 February 1995 (1995-02-09) page 12, line 12; figures 5,8 page 13, paragraph 2 - paragraph 3	1,2,8,9
X	EP 0 601 709 A (VANCE) 15 June 1994 (1994-06-15) figure 1	1,23
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-/-		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 48%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&amp;" document member of the same patent family</p> </div> </div>		
Date of the actual completion of the international search  <div style="text-align: center;">29 March 2000</div>		Date of mailing of the international search report  <div style="text-align: center;">26.05.2000</div>
Name and mailing address of the ISA European Patent Office, P.B. 5518 Patentlaan 2 NL - 2280 HV Rijswijk Tel (+31-70) 340-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016		Authorized officer  <div style="text-align: center;">Barton, S</div>

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International Application No.

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## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	WO 98 24372 A (ANGIOTRAX) 11 June 1998 (1998-06-11) figures 3,4,6,8	1,14,17, 20 23,30, 33,36
X	US 4 966 583 A (DEBBAS) 30 October 1990 (1990-10-30) figures 4,5	1,14,23, 30
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X A	WO 94 27670 A (CARDIAC PATHWAYS) 8 December 1994 (1994-12-08) figures 3,4	1,14,17 33
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 99/19123

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 41-48  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

The International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:  
1,2,8,9,14-20,23,30-36
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1,2,8,9,23

Medical device with tissue attachment and localisation wire

2. Claims: 1,3-13,23-29,40

Medical device with [means for dispensing] a dispensable bonding agent as means for fixing distal end to target tissue

3. Claims: 1,14-20,23,30-36

Medical device with expandable mechanical structure as means for fixing the distal end to target tissue

4. Claims: 1,21,22,38,39

Medical device with electrocautery means as means for fixing the distal end to target tissue

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/US 99/19123

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No.

PCT/US 99/19123

Patent document cited in search report.	Publication date	Patent family member(s)	Publication date
US 5766163 A	16-06-1998	NONE	